

# PRODUCT INFORMATION PACKET



Model No: 6RN280M02E42U461041

Catalog No: 6RN280M02E42U46@1041

90.00 kW General Purpose Low Voltage IEC Motor IE4, 3 phase, 3000 rpm, D400/Y690V 50Hz,  
280M Frame B3, IC411

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## Nameplate Specifications

|                        |               |                            |                             |
|------------------------|---------------|----------------------------|-----------------------------|
| Output HP              | 120.00 Hp     | Output KW                  | 90.0 kW                     |
| Frequency              | 50 Hz         | Voltage                    | D400/Y690 V                 |
| Current                | 152.00 A      | Speed                      | 2978 rpm                    |
| Service Factor         | 1             | Phase                      | 3                           |
| Efficiency             | 95.8 %        | Power Factor               | 0.89                        |
| Duty                   | S1            | Insulation Class           | F                           |
| Frame                  | 280M          | Enclosure                  | Totally Enclosed Fan Cooled |
| Thermal Protection     | No Protection | Ambient Temperature        | 40 °C                       |
| Drive End Bearing Size | 6315/C3       | Opp Drive End Bearing Size | 6315/C3                     |
| UL                     | No            | CSA                        | Optional                    |
| CE                     | Yes           | IP Code                    | IP55                        |
| Number of Speeds       | 1             | Efficiency Class           | IE4                         |

## Technical Specifications

|                 |                   |                   |                     |
|-----------------|-------------------|-------------------|---------------------|
| Electrical Type | Squirrel Cage     | Starting Method   | Direct On Line      |
| Poles           | 2                 | Rotation          | Clockwise Shaft End |
| Mounting        | B3                | Motor Orientation | Any                 |
| Frame Material  | Cast iron         | Shaft Type        | Keyed               |
| Outline Drawing | 6RN280M02E42_1041 |                   |                     |

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## Datasheet

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Model No. 2-Pole cage motor 6RN 280M 90kW D400V 50Hz IM1041

| U<br>(V) | Δ / Y<br>Conn | f<br>[Hz] | P<br>[kW] | P<br>[hp] | I<br>[A] | n<br>[RPM] | T<br>[Nm] | IE<br>Class | % EFF at __ load |       |       | PF at __load |       |       | I <sub>A</sub> /I <sub>N</sub><br>[pu] | T <sub>A</sub> /T <sub>N</sub><br>[pu] | T <sub>K</sub> /T <sub>N</sub><br>[pu] |
|----------|---------------|-----------|-----------|-----------|----------|------------|-----------|-------------|------------------|-------|-------|--------------|-------|-------|----------------------------------------|----------------------------------------|----------------------------------------|
|          |               |           |           |           |          |            |           |             | FL               | 3/4FL | 1/2FL | FL           | 3/4FL | 1/2FL |                                        |                                        |                                        |
| 400      | D             | 50        | 90        | 120       | 152      | 2978       | 288       | IE4         | 95,7             | 95,8  | 95,4  | 0,89         | 0,87  | 0,81  | 8,86                                   | 2,77                                   | 3,43                                   |
| 690      | Y             |           |           |           | 87,7     |            |           |             |                  |       |       |              |       |       |                                        |                                        |                                        |
| 460      | D             | 60        | 101       | 135,4     | 148      | 3578       | 269       | IE4         | 95,7             | 95,6  | 94,9  | 0,90         | 0,88  | 0,83  | 8,78                                   | 2,85                                   | 3,35                                   |

|                |                              |
|----------------|------------------------------|
| Motor type     | 6RN280M02E42                 |
| Enclosure      | Totally Enclosed Fan Cooling |
| Frame Material | Cast iron                    |
| Frame size     | 280M                         |
| Duty           | S1                           |
| Voltage        | 400 V                        |
| Frequency      | 50 Hz                        |
| Power output   | 90 kW                        |

|                               |                        |
|-------------------------------|------------------------|
| Insulation class              | F                      |
| Ambient temperature           | -20 till 40 °C         |
| Temperature rise              | temp.rise acc. B (80K) |
| Temperature rise winding      | 63 K                   |
| Temperature rise surface      | 23 K                   |
| Altitude above sea level      | 1000 mtr               |
| Hazardous area classification | Safe area              |

|                    |              |
|--------------------|--------------|
| Rotor type         | Cage motor   |
| Bearing type       | 6315/C3      |
| Lubrication method | 25gr/4000hrs |
| Type of grease     | Unirex N3    |

|                          |            |
|--------------------------|------------|
| Phase resistance at 20°C | 0,0406 Ohm |
| Country of origin        | CZ         |

| Voltage/Freq  | Locked rotor<br>Torque<br>[% nom] | Starting<br>current<br>[% nom] | Pull-up<br>Torque<br>[% nom] | Breakdown<br>Torque<br>[% nom] | No-load<br>Current<br>[A] |
|---------------|-----------------------------------|--------------------------------|------------------------------|--------------------------------|---------------------------|
| @ D 400V 50Hz | 277%                              | 881%                           | 232%                         | 343%                           | 40,8 A                    |
| @ D 460V 60Hz | 285%                              | 871%                           | 229%                         | 335%                           | 37,7 A                    |

## NOTE

All performance values at rated voltage and frequency.

All performance parameters are subjected to standard tolerance as per IEC 60034-1

Voltage, Frequency are as per IEC60034-1

Technical data are subject to change. There may be discrepancies between calculated and name plate values.

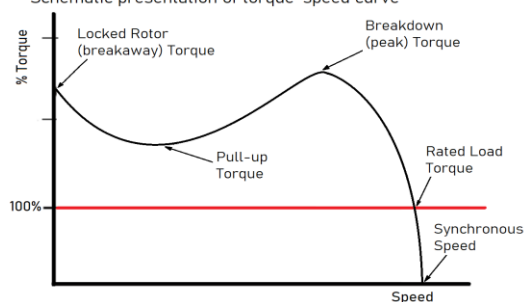
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|------------|------------------|---------------|
| Efficiency | Europe           | Global IEC    |
| Standards  | EN-IEC: 60034-30 | IEC: 60034-30 |

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|                                    |                         |
|------------------------------------|-------------------------|
| Degree of protection               | IP55                    |
| Mounting type                      | IM1041                  |
| Cooling method                     | IC411                   |
| Motor weight - approx.             | 610 kg                  |
| Gross weight - approx.             | 630 kg                  |
| Motor inertia                      | 1,0000 kgm <sup>2</sup> |
| Vibration level                    | according IEC60034-14   |
| Noise level (pressure) acc 60034-9 | 73 dB(A)                |

|                       |          |
|-----------------------|----------|
| Direction of rotation | cw / ccw |
|-----------------------|----------|

Schematic presentation of torque-speed curve



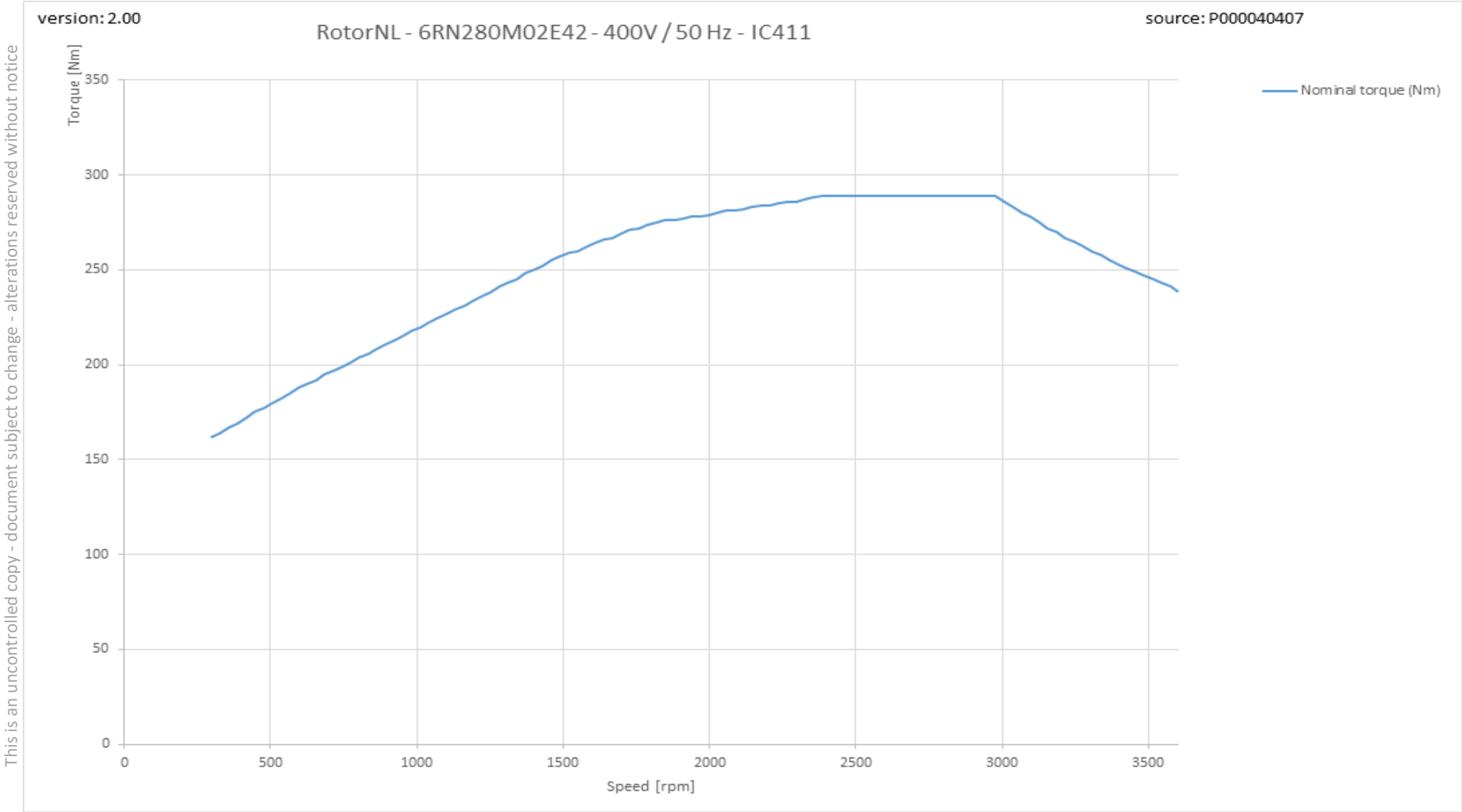
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6RN280M02E42 2-pole 90,00kW D/Y 400/690V 50Hz S1 IC411 IE4

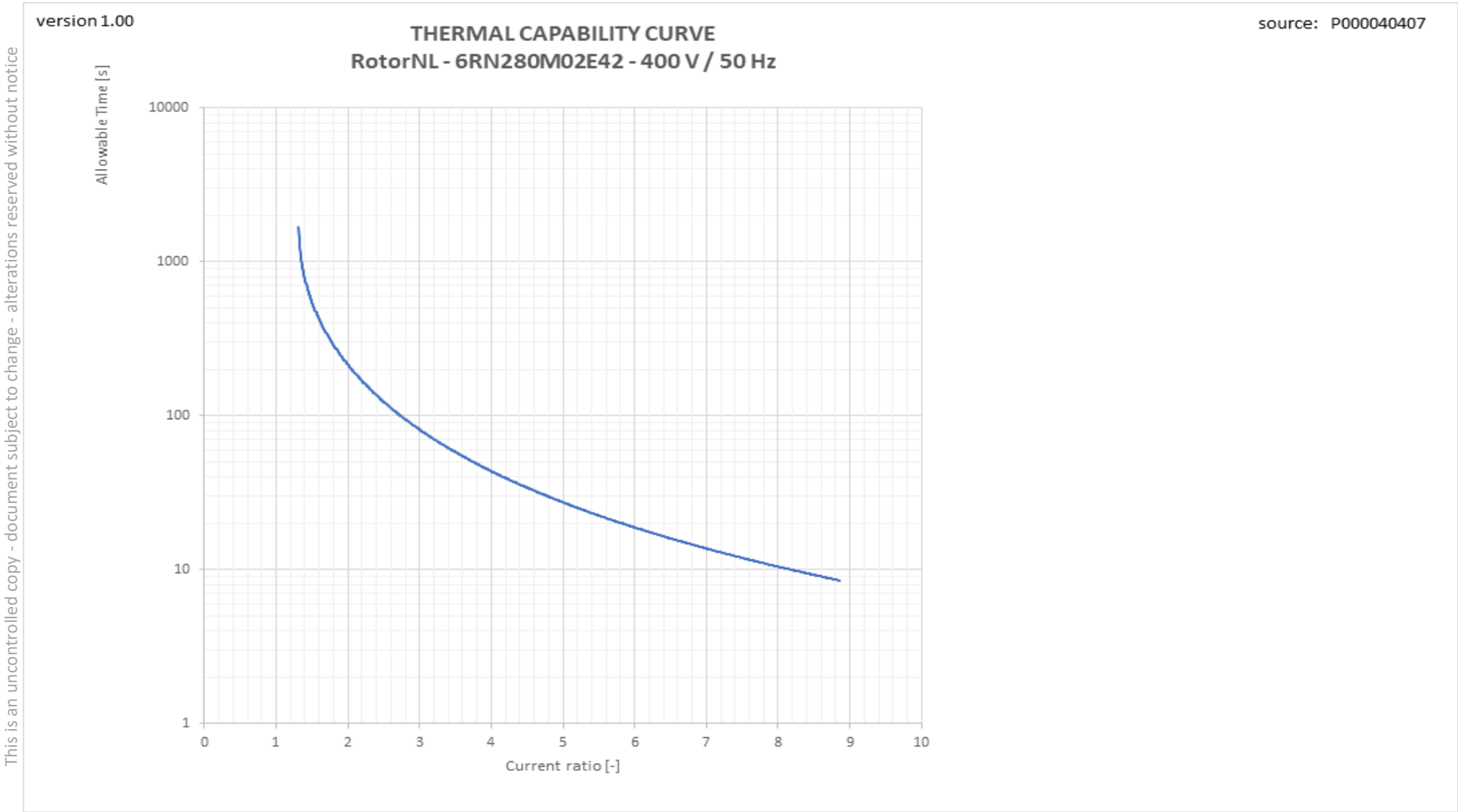


Torque versus Speed curve with variable frequency drive



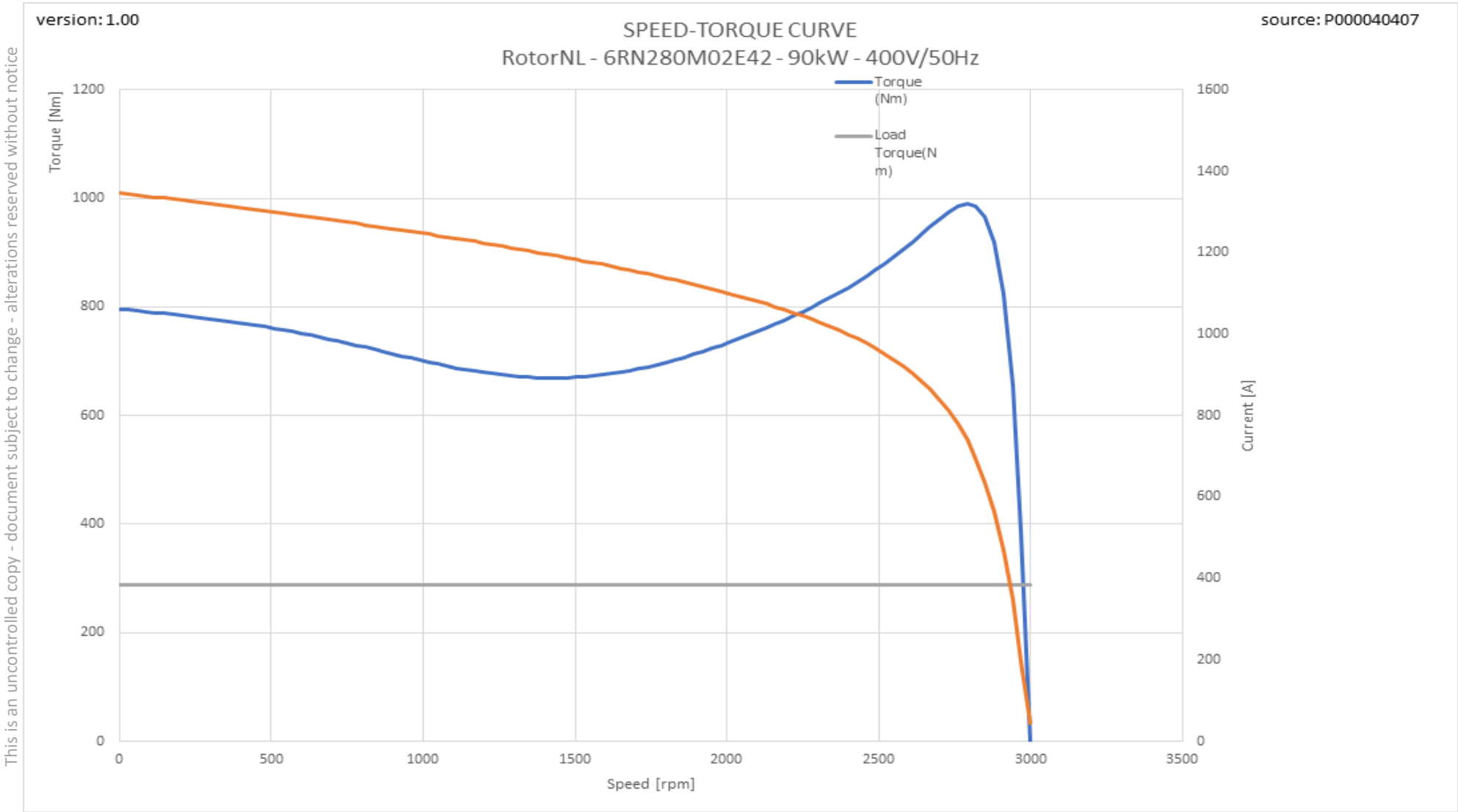
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Therm\_VSD graph



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Tn graph



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